

CANCER OF THE PAROTID GLAND.*

REPORT OF FIVE CASES, BY GEORGE A. HENDON, M. D., PROFESSOR OF SURGERY IN THE UNIVERSITY OF LOUISVILLE.

(1) *Incidence.*—I have been astonished at the rarity of the occurrence of this malady as indicated by published reports. The five cases here referred to include the whole number of cases which I have seen either in my own work or that of my colleagues, although a few days ago Dr. Sherrill showed me the photograph of a patient upon whom he expected to operate, and which had the appearance of cancer of the parotid.

In 1892 H. Bohme collected 411 cases of tumors of the salivary gland, 90.51 per cent. appearing in the parotid. I have succeeded in finding references to fourteen scattering cases and twenty-six cases reported by Dr. Francis Carter Wood, vol. xxxix. of the *Annals of Surgery*, making in all 417 cases reported to date, including the five cases of the writer. Dr. W. W. Keen makes an interesting report of a case in the *Journal of the American Medical Association*, vol. xlii., p. 1138; also Dr. Cordier, same journal, vol. l., p. 138.

History.—The knowledge as to the histology the clinical manifestations were very meager up to the second half of the nineteenth century. Von Bruns in 1859 was the first who described neoplasms of the parotid from his own cases as well as those of foreign sources, giving the clinical, macroscopic and pathologic anatomic features. C. O. Weber added markedly to the causes. The histological studies were notably furnished by Billroth and Virchow, the latter making a special study of enchondroma. More recently Kaufman and Nasse have worked out the histology of the various tumors of the salivary glands and gave especial study to

those forms of the mixed variety connective tissue substance and epithelial. (H. Bohme.)

Etiology.—Billroth in his work on the subject, says the seat of the growth is more often found in the parotid gland, especially in that part situated below and in front of the ear than in the submaxillary. Trauma is said to play a most important role. Billroth mentions two cases from a blow over the parotid.

Kaufman collected 29 cases with the tumor on the left side in 17, and 12 on the right. C. O. Weber believes that inflammatory processes might be of etiologic moment, especially repeated attacks of facial erysipelas, toothache and colds. Cohnheim thinks that enchondroma is of foetal origin by including the cartilaginous elements in the branchial arch. Parotid tumors show microscopically all the varieties of connective tissue epithelial substance. Bohme collected 372 cases from the literature as follows:

Sarcoma	128	— 34.41 per cent.
Carcinoma	96	— 28.81 per cent.
Conchondroma	58	— 15.59 per cent.
Fibroma	17	— 4.57 per cent.
Myxoma	15	— 4.03 per cent.
Adenoma	11	— 2.96 per cent.
Lipoma	9	— 2.42 per cent.
Not classified	38	— 10.21 per cent.

Billroth reports two cases of cancer with operation and recovery. He does not agree with Bohme, whose statistics are here given showing 96 cases of carcinomata in 372 or 25.81 per cent. He thinks these figures are too high and that in more recent literature but very few cases of parotid cancer are reported.

According to the monograph of Kaufman and Nasse a part of these cases formerly de-

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scribed as carcinoma were in reality not epithelial growths, but endotheliomata, *i. e.*, tumors belonging to the connective tissue groups. Recent statistics show that the disease is comparatively rare. Nasse found only two cases in 33 tumors. In Billroth's two cases they occurred in elderly persons, a rule which applies to cancer in other situations. In Bohme's statistics of 87 cases the age was as follows:

1 — 10	3	3.4 per cent.
11 — 20	7	8.1 per cent.
21 — 30	17	19.5 per cent.
31 — 40	8	9.3 per cent.
41 — 50	11	12.7 per cent.
51 — 60	19	21.8 per cent.
61 — 70	17	19.5 per cent.
71 — 80	3	3.4 per cent.
81 — 90	2	2.3 per cent.
Total.....	87	100 per cent.

From this table it will be seen that the disease is especially frequent in advanced age; most striking, however, is that the second most often occurrence is in the third decade, 17 cases or 19.5 per cent. One explanation of this is, as stated above, sarcomata were formerly reported as carcinomata. The disease is decidedly more prevalent in the male in 90 of Bohme's cases; 57 were in males and 23 females. Horace Read (*Am. J. Clin. Med.*, 1907, XIV, 337) is of the opinion that sarcoma and carcinoma occur in frequency about equal. With reference to age, Dr. Francis Carter Wood (*Am. Surg.*, XXXIX, P. 210) makes the following observation in a study of 59 cases of mixed tumors of the salivary glands:

Four tumors appeared in the first decade; one in the second; thirteen in the third; eight in the fourth; nine in the fifth; four in the sixth, and three in the seventh. In my short series of five there were two in the sixth and three in the seventh, and they were all in men.

Pathology.—I don't believe this phase of the

subject can be better presented than by copying the Wood's conclusions in the article above referred to. (*Am. Surgery*, Vol. XXXIX, P. 233.)

(1) "There is a group of extremely complicated tumors occurring in the facial region which contain elements from both epi and mesoblast in most intimate relation to each other.

(2) "The complicated structure of the stroma, containing as it does elements such as embryonic connective tissue, cartilage, bone, fat and lymphoid tissue and very rarely striated muscle, is explained most easily by the assumption of an embryonic misplacement of mesoblast.

(3) "The structure of the parenchyma is so slightly characteristic in morphology that its epithelial nature in all cases can only be considered as probable; yet in about 34 per cent. of the tumors examined the presence of epithelium is undoubted. The form and relationship of cells of the parenchyma do not furnish sufficient data to justify these cells being regarded as of endothelial origin.

(4) "The theory of early embryonic displacement of epiblastic tissue during the process of formation of the parotid and submaxillary glands and the branchial arches may account for many morphological peculiarities of the cells of these tumors, especially the lack of many typical features which we associate with epithelium. The same conditions may be seen in the epithelial cells of the congenital moles in which the epithelium is with difficulty distinguished from connective tissue cells owing to its close connection with the stroma of the tumors and its undifferentiated type.

(5) "The mixed tumors of the salivary glands run a clinical course strikingly different from the sarcomata and carcinomata in that they are slow growing and generally benign. The regional lymph nodes are not invaded and recurrences are likely to remain local in a considerable proportion of the cases.

Diagnosis.—To avoid serious error in diagnosis one has only to remember the ordinary inflammatory reactions to which the parotid gland is prone. The history of the swelling will furnish sufficient evidence of its clinical character. The writer recalls a memorable case of suppuration in the parotid which was traceable to the lodgment of a fragment of a chestnut hull eight months before.

Clinical Progress.—Slow growth characterizes tumors of the parotid. Three of my cases had dated back more than a year when they came to operation. C. O. Weber's cases were more than a year's duration when operation was sought. Four of my cases showed ulceration through the cuticle, which seems to be a characteristic of the disease. In none of my cases was there extensive involvement of adjacent lymphatic glands. Neither was there present the familiar scene of cancerous cachexia.

REPORT OF PERSONAL CASES.

1. Mr. P., æt. 78 years. Had always been a strong, healthy man (a farmer). Was seen in February, 1907, complaining of painful swelling of parotid. A portion of growth was excised under cocaine for diagnostic purposes. Report of pathologist was carcinoma. Operation advised and accepted.

Operation.—Ligation of common carotid. Removal of growth by wide excision. Wound healed by first intention and up to the present writing there has been no recurrence of growth. But there is pronounced facial paralysis.

2. Mr. J., æt. 64 years. Seen through the courtesy of Dr. J. R. Pryor. Presented an ulcerating swelling over the site of the parotid. Operation June 17, 1906. Recurrence. Operated second time September 4, 1906, with ligation of common carotid artery of same side. Apparently cured.

Recurrence and operated the third time December 9, 1907. The ulceration now extended

into the middle ear. The external growth removed by Paquelin cautery. Erysipelas developed January 8, 1908, and continued three weeks. This caused the granulating surface to heal rapidly. Healing progressed to margin of external auditory canal and ulceration again extended over surface as large as a dollar and discharge from auditory canal began. This patient is in very good nutrition now, but there is undoubted involvement of the middle ear.

3. J. B., aged 77. Referred by Dr. Pryor. Ulcerating tumor of parotid. First operation March 23, 1907; second operation June 23, 1907. The latter time ligation of common carotid was performed. Complete recovery up to present time.

4. M. H., æt. 71. First operation by Dr. Butler in May, 1907. Was operated upon by writer December 9, 1907.

This case was the worst of the group. Ulceration had destroyed the whole external ear and excavated most of the gland and covered a surface from the angle of the jaw to the outer canthus and back over the mastoid.

First step of operation was ligation of common carotid; then with Paquelin cautery the involved area was removed down to the bone. The man had erysipelas January 4, 1908, which continued three weeks with apparently beneficial results.

A personal note from Dr. Pryor, who sent me the case, records that in June, 1908, the surface has almost healed, but slight nodule appears at the upper and post nodule of the wound.

This patient succumbed in October, 1908, to the effects of the cancer.

5. J. S., aged 66. Referred by Dr. Pryor. Ulcerating tumor of parotid. Ligation of common carotid, excision of tumor with prompt recovery.

The only feature of technique worthy of note in connection with this series is that of ligation of the common carotid. We have

here presented five instances of carotid ligation in old people without any untoward symptom or sign of disturbance.

I was taught by operating on these five cases the value of the near sitting posture as an aid to the control of hemorrhage. Also I learned the ease and rapidity and security attendant upon the removal of growths in the neck region after ligation of the common carotid.

The group of personal cases herein reported shows recovery of 3 cases, or 60 per cent.; 20 per cent. not cured, and 20 per cent. still alive, but re-establishment of the growth.

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